

**RECEIVED
CENTRAL FAX CENTER**

SEP 16 2005

Docket No.: 4444-024

PATENT**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of

MAINARD, LAURENT

U.S. Patent Application No. 09/890,300

Filed: July 27, 2001

Confirmation No.: 2645

Group Art Unit: 2645

Examiner: JOSEPH T. PHAN

For: SERVICE TRANSMISSION SYSTEM RELATED TO RELEVANT GEOGRAPHICAL
ZONES AND RECEIVER DESIGNED TO BE USED WITH SAID TRANSMISSION
SYSTEM**TRANSMITTAL OF APPEAL BRIEF**Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

September 16, 2005

Sir:

Applicant herewith submits a Brief on Appeal to the Board of Appeals from the decision of the Primary Examiner finally rejecting claims 1-12.

Filing Fee: \$500.00

- ☐ Not required (fee paid in prior appeal in this application).
☒ Credit Card Authorization form
☐ Charge to Deposit Account No. 07-1337.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

LOWE HAUPTMAN & BERNER, LLP

Allan M. Lowe
Reg. No. 19,6411700 Diagonal Road, Suite 300
Alexandria, Virginia 22314
(703) 684-1111 Telephone
(703) 518-5499 Facsimile
AMJ/acs**BEST AVAILABLE COPY**

**RECEIVED
CENTRAL FAX CENTER**

SEP 16 2005

Docket No. 4444-024

PATENT**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of	:
Inventors: Laurent MAINARD et al.	: Confirmation No. 8931
U.S. Patent Application No. 09/890,300	: Group Art Unit: 2645
Filed: July 27, 2001	: Examiner: Joseph T. PHAN
For: SERVICE TRANSMISSION SYSTEM RELATED TO RELEVANT GEOGRAPHICAL ZONES AND RECEIVER DESIGNED TO BE USED WITH SAID TRANSMISSION SYSTEM	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attn: BOARD OF PATENT APPEALS AND INTERFERENCES

BRIEF ON APPEAL

This brief is in furtherance of the Notice of Appeal, filed in this case on June 16, 2005.

The fees required under § 1.17(f) and any required petition for extension of time for filing this brief and fees therefore, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

09/19/2005 TL0111 00000056 09090300

01 FC:1402

500.00 OP

Serial No. 09/890,300

TABLE OF CONTENTS

I.	Real Party in Interest	3
II.	Related Appeals and Interferences	3
III.	Status of Claims	3
IV.	Status of Amendments	3
V.	Summary of Claimed Subject Matter	3
VI.	Grounds of Rejection to be Reviewed on Appeal	5
VII.	Argument	5
VIII.	Conclusion	10
IX.	Claims Appendix	11
X.	Exhibit	Appendix

Serial No. 09/890,300

I. Real Party in Interest

The real parties in interest are France Telecom SA and Telediffusion De France SA.

II. Related Appeals and Interferences

There are no related appeals and/or interferences.

III. Status of Claims

Claims 1-12 are rejected as being anticipated under 35 U.S.C. 102(e) by Ito et al. (USP 5,999,126).

No claims are allowed or indicated as allowable.

No claims are cancelled.

IV. Status of Amendments

The amendment after final rejection and all other amendments have been entered.

V. Summary of Claimed Subject Matter

The claimed invention relates to a wireless transmission system for services linked to particular, i.e., relevant, geographic zones and to a receiver 100 that is used in the transmission system (Paragraph 01). The system includes transmitters 1-4, respectively associated with coverage zones 10, 20, 30 and 40, such that transmitter 1 transmits at least one service to and for zone 11, that also has services transmitted to it by transmitter 2; transmitter 2 transmits services to and for zones 21-23; transmitter 3 transmits services to and for zone 3 (zone 21 also has services transmitted to it by transmitters 2 and 4); transmitter 4 transmits services to and for

Serial No. 09/890,300

zones 41 and 42; transmitters 1-4 transmit services to and for zones 22 and 32 (Paragraphs 22, 27, 31 and 35).

A receiver 100 includes a receiver sub-assembly 110 for receiving the services transmitted from transmitters 1-4, as well as a locating unit 130 for determining the geographic position of the receiver (Paragraph 40). Switching unit 140 switches the receiver sub-assembly 110 for enabling the receiver sub-assembly 110 to receive services linked to the particular zone corresponding to the geographic position determined by locating unit 130. While transmitters 1-4 are transmitting the services linked to overlapping zones 11, 21-23, 31, 32, 41 and 42, the transmitters transmit descriptions of these zones, addresses of services linked to these zones, as well as descriptions and addresses of services of zones that neighbor with the particular zones (Paragraphs 33 and 35).

The services can, for example, provide information to a motorist about traffic in the zones 11, 21-23, 31, 32, 41 and 42 as a vehicle is moving through the zones (paragraph 30).

In the past, switching from a service assigned to a first geographic zone to a service assigned to a second geographic zone as a vehicle moved from the first to the second zone was performed by switching the receiver in the vehicle from a transmitter of the first zone to a transmitter of the second zone. The switching was performed in response to location data obtained from a locating system, such as the Global Positioning System (GPS), and in response to stored data concerning the geographic boundaries of the services where the broadcast was likely to be received (Paragraph 04). As the vehicle moved from zone to zone, the tuned frequency of the receiver changed, based on the stored data (Paragraph 05). This has the disadvantage of requiring a memory for storing the frequencies of the different zones

Serial No. 09/890,300

(Paragraph 09). A further disadvantage of the prior art system was that it was, at the time the application was filed, impossible to transmit information relating to an accurately defined particular zone (Paragraph 07).

These problems are resolved by the claimed method and apparatus because the transmitters simultaneously transmit the services that are linked to the particular coverage zones, the descriptions of the particular zones and the addresses of the zones, as well as a description of the zones that neighbor on the particular zone and the addresses of the services of zones that neighbor on the particular zones (Paragraph 12). Because this information is transmitted for the zone where the receiver is located, as well as the neighboring zone, the need to store the information is obviated and the zones are precisely defined and can, for example, be polygons having apices on road markers, such as mile signs and toll stations (Paragraph 30).

VI. Grounds of Rejection to be Reviewed on Appeal

The sole issue to be resolved on Appeal is that claims 1-12 are not anticipated by Ito et al. The anticipation rejection based on Ito et al. alleges that Ito et al. discloses features of claims 1-12. Hence, no issue of inherency is presented.

VII. Argument

The final rejection incorrectly alleges that Figures 11A, 13A-13D, column 9, lines 30-56, column 10, lines 49-65 and column 11, lines 14-24 of Ito meet the requirements of claims 1 and 12 for transmitting descriptions of the relevant zones, addresses of the services linked to

Serial No. 09/890,300

the relevant zones, and descriptions and addresses of services of neighboring relevant zones that in claim 12 are required to overlap, but which are not required in claim 1 to overlap claim 2, that depends on claim 1, requires the zones to overlap.

Figures 11A-11C of Ito and the description thereof indicate base stations 3a, 3b and 3c, Figure 3, transmit radio waves in three different regions, portions of which overlap. Base stations 3a, 3b and 3c transmit data signals and audio signals that are used by position calculation unit 11 on vehicle 1 to determine the position of the vehicle. If vehicle 1 is located so that it receives radio waves from all three base stations, vehicle 1 is in the region where the radio waves from all three base stations overlap, as indicated in Figure 11A. Position calculation unit 11 responds to an indication of the number of signals the vehicle is receiving from stations 3a-c and a GPS signal to determine vehicle position.

A determination is made by control unit 12 on vehicle 1 of the nature of the service signals that stations 3a-c transmit; Ito also refers to the service signal as the data signal. The Ito service signal can provide traffic information, such as information about traffic jams, closed streets and construction; column 10, lines 49-52. The service information can also include weather information (Column 11, line 2), special news (Column 11, line 9), advertisements, events or tourism information, as well as vehicle routing information (Column 11, lines 7-38).

In Ito, if a service signal is transmitted from one of the base stations 3a, 3b or 3c, the receiver in vehicle 1 responsive to antenna 9 determines which service is being received and the corresponding service information is displayed as indicated, for example, in Figures 13A-13D, 14, 15A-15B and 16. However, there is no disclosure in Ito that the base stations 3a-3c respectively transmit (1) descriptions of zones 1-3 of Figure 11A, (2) addresses of services

Serial No. 09/890,300

linked to zones 1-3 or that base station 3a transmits descriptions and addresses of services in neighboring zones 2 and 3 or that base station 3 transmits descriptions and addresses of services in neighboring zones 1 and 3, or that base station 3c transmits descriptions and addresses of services in neighboring zones 1 and 2, as required by claims 1 and 12.

It appears that the transmissions from base stations 3a-3c are of a general nature. Each of base stations 3a-3c is spaced from its neighboring base station by only 100 meters in a typical situation; column 4, line 29. It is illogical to conclude that a cell having such a small area would transmit information only about that cell and cells that overlap the particular cell. Further, Ito has no disclosure of transmitting addresses of the services linked to the particular cells and of the neighboring cells, particularly neighboring cells that overlap, as required by claims 2 and 12.

The Examiner incorrectly states that the relevant geographic zones of Ito meet the requirements of claim 4 for the relevant geographic zone to be determined by a closed set of geometric features defining one or more polygons, defining at least one polygon. In Ito, regions 1-3 (Fig. 11A), respectively associated with base stations 3a-c, are circles. Clearly, a circle is not a polygon. In this regard, a polygon is "a figure in the plane given by points $p_1 p_2 \dots, p_n$ and line segments $p_1 p_2, p_2 p_3 \dots, p_{n-1} p_n, p_n p_1$; *McGraw-Hill Dictionary of Science and Technical Terms*, McGraw-Hill Book Company, 1974, page 1146 (Exhibit A). A circle is not defined by points and line segments.

The anticipation rejection of claim 5, that depends on claim 4 and requires at least one apex of at least one of the polygons to be coincident with road markers, is incorrect. The final office action says the foregoing features are found in Figures 13A-13D, column 9, lines 30-56,

Serial No. 09/890,300

column 10, lines 49-65 and column 11, lines 14-24. However, these portions of Ito are concerned with the display in the vehicle, not regions 1-3 of Fig. 11A. Further, the relied upon portion of Ito has no disclosure of an apex of a polygon being coincident with a road marker.

The reliance on Figures 11A, 11B and 13A of Ito for the feature of claim 6, requiring some of the geographic zones of claim 1 to be vigorously within others of the zones, is incorrect. As illustrated in Figures 11A and 11B of Ito, transmission regions 1-3 overlap, but none of the regions are vigorously within (i.e., entirely within) the other regions. Figure 13A is not germane because it is an illustration of a display, not of the transmission zones.

The allegation that Ito discloses the claim 7 requirement for each transmitter to be arranged to transmit information about data density and service quality is incorrect. The allegation that data density and service quality are included in music optionally transmitted from the base stations is wrong. The Examiner has not shown that there is any relationship of data density and service quality with music.

The Examiner incorrectly alleges Ito discloses in Figures 1, 13A-D, column 9, lines 30-56, column 10, lines 49-65 and column 11, lines 14-24, the requirement of claim 8 for a switching unit for receiving descriptions of services of neighboring relevant zones and for switching a receiver subassembly so that the receive sub-assembly can receive at least one of the services linked to at least one of the relevant zones corresponding to the geographic position ascertained by a locating unit. There is no disclosure in the relied upon portion of Ito for a receiver sub-assembly which receives services linked to the zones where the receiver is located, or descriptions and addresses of services of neighboring zones. In this regard, Ito has

Serial No. 09/890,300

no disclosure of the information transmitted from the base stations being associated with services linked to the zone where the base station is located.

The allegation, in the final office action regarding claim 9, that Ito discloses, in Figures 13A-13D an actuator for enabling a user to activate the switching unit of claim 8 according to when the geographic position determined by the locating unit corresponds to boundaries of a relevant zone situated within one or more other relevant zones is incorrect. Figures 13A-13D merely include displays for particular services. These displays have nothing to do with activating a switching unit, density data and service quality.

To reject claim 10, the Examiner incorrectly equates a user selector for data density and service quality with a user selector for music.

The reliance on Figure 1, column 1, line 55-column 2, line 42 of Ito for the claim 11 requirement for the locating unit of the receiver of claim 8 to be fitted with an extrapolation function for instantaneously determining vehicle position based on previously sorted coordinates is incorrect. There is no mention of extrapolation in the relied upon portion of Ito.

Serial No. 09/890,300

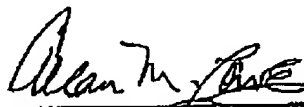
VIII. Conclusion

Based on the foregoing, the rejection of claims 1-12 as being anticipated by Ito et al. is erroneous and reversal thereof is in order.

Respectfully submitted,

LOWE, HAUPTMAN & BERNER, LLP

By:



Allan M. Lowe
Reg. No. 19,641

1700 Diagonal Road, Suite 310
Alexandria, Virginia 22314
Telephone: (703) 684-1111
Facsimile: (703) 518-5499
Date: September 16, 2005
AML/tal/acs

Serial No. 09/890,300

IX. Claims Appendix

Claim 1: A transmission system for services linked to relevant geographic zones, said system comprising:

at least one transmitter for transmitting said services into said relevant zones;

a receiver comprising a receiver sub-assembly for receiving said services, a locating unit for determining the geographic position of said receiver; and

a switching unit for switching said receiver sub-assembly for enabling said receiver sub-assembly to receive at least one service linked to at least one relevant zone corresponding to the geographic position ascertained by said locating unit wherein:

while transmitting the services linked to overlapping relevant zones, said transmitter is arranged to transmit descriptions of the relevant zones, addresses of the services linked to the relevant zones, and descriptions and addresses of services of neighboring relevant zones.

Claim 2: Services transmission system as claimed in claim 1, wherein at least one relevant geographic zone among said zones overlaps at least one neighboring relevant zone.

Claim 3: Services transmission system as claimed in claim 1, wherein each relevant geographic zone is defined by a set of geometric features.

Serial No. 09/890,300

Claim 4: Services transmission system as claimed in claim 3, wherein at least one relevant geographic zone is determined by a closed set of geometric features defining one or more polygons defining at least one polygon.

Claim 5: Services transmission system as claimed in claim 4, wherein at least one apex of at least one of said one or more polygons is coincident with road markers.

Claim 6: Services transmission system as claimed in claim 1, wherein some of said relevant zones are included rigorously within others of said relevant zones.

Claim 7: Services transmission system as claimed in claim 1, wherein each transmitter is also arranged to transmit optional information about data density and service quality.

Claim 8: A receiver for receiving services linked to relevant geographic zones and transmitted by at least one transmitter, said receiver comprising:

a locating unit for determining a geographic position of said receiver;

a receiver sub-assembly which, simultaneously with said receiver, is arranged for receiving:

- (a) the services linked to the zones wherein said receiver is located,
- (b) descriptions of the relevant zones, addresses of the services linked to the relevant zones, and
- (c) descriptions and addresses of services of neighboring relevant zones; and

Serial No. 09/890,300

a switching unit for receiving said descriptions and switching said receiver sub-assembly so that said receiver sub-assembly can receive at least one of the services linked to at least one of the relevant zones corresponding to the geographic position ascertained by said locating unit.

Claim 9: Receiver as claimed in claim 8, further including an actuator for enabling a user to activate the switching unit according to when the geographic position determined by said locating unit corresponds to boundaries of a relevant zone situated within one or more other relevant zones.

Claim 10: Receiver as claimed in claim 8, wherein said receiver sub-assembly is arranged for receiving information on density data and service quality, said receiver sub-assembly further including a user selector for enabling a user to select at least one of data density and service quality applied to the switching unit such that said switching unit is able to switch said receiver sub-assembly to receive the service(s) linked to the relevant zone(s) of which at least one of the data density and the service quality correspond to said user's selection.

Claim 11: Receiver as claimed in claim 8, wherein the locating unit is fitted with an extrapolation function for instantaneously determining vehicle position based on previously sorted coordinates.

Claim 12: A method of transmitting services linked to relevant geographic zones, said method comprising:

transmitting said services into said relevant zones;

Serial No. 09/890,300

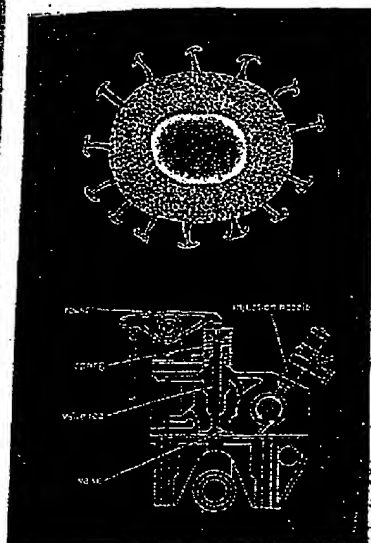
receiving said services at a receiver in one of said zones;

determining the geographic position of said receiver;

receiving at the receiver site at least one service linked to at least one relevant zone corresponding to the determined geographic position;

transmitting descriptions of the relevant zones, addresses of the services linked to the relevant zones, and descriptions and addresses of services of neighboring relevant zones while transmitting the services linked to a plurality of the relevant zones that overlap.

EXHIBIT A



McGraw-Hill Dictionary of Scientific and Technical Terms

DANIEL N. LAPEDES Editor in Chief

McGRAW-HILL BOOK COMPANY
New York St. Louis San Francisco

Auckland
Düsseldorf
Johannesburg
Kuala Lumpur
London
Mexico
Montreal
New Delhi
Panama
Paris
São Paulo
Singapore
Sydney
Tokyo
Toronto

Included in this Dictionary are definitions which have been published previously in the following works: P. B. Jordain, *Condensed Computer Encyclopedia*, Copyright © 1969 by McGraw-Hill, Inc. All rights reserved. J. Markus, *Electronics and Nucleonics Dictionary*, 3d ed., Copyright © 1960, 1966 by McGraw-Hill, Inc. All rights reserved. J. Quick, *Artists' and Illustrators' Encyclopedia*, Copyright © 1969 by McGraw-Hill, Inc. All rights reserved. *Blalston's Gould Medical Dictionary*, 3d ed., Copyright © 1956, 1972 by McGraw-Hill, Inc. All rights reserved. T. Baumeister and L. S. Marks, eds., *Standard Handbook for Mechanical Engineers*, 7th ed., Copyright © 1958, 1967 by McGraw-Hill, Inc. All rights reserved.

In addition, material has been drawn from the following references: R. Rauschke, *Glossary of Meteorology*, American Meteorological Society, 1959; *U.S. Air Force Glossary of Standardized Terms*, AF Manual 11-1, vol. 1, 1972; *Communications-Electronics Terminology*, AF Manual 11-1, vol. 3, 1970; W. H. Allend, *Dictionary of Technical Terms for Aerospace Use*, 1st ed., National Aeronautics and Space Administration, 1965; J. M. Gilliland, *Solar-Terrestrial Physics: Glossary of Terms and Abbreviations*, Royal Aircraft Establishment Technical Rep. 67153, 1967; *Glossary of Air Traffic Control Terms*, Federal Aviation Agency; *Glossary of Range Terminology*, White Sands Missile Range, New Mexico, National Bureau of Standards, AD 467-424; *A DOD Glossary of Mapping, Charting and Geodetic Terms*, 1st ed., Department of Defense, 1967; P. W. Thrush, comp. ed., *A Dictionary of Mining, Mineral, and Related Terms*, Bureau of Mines, 1963; *Nuclear Terms: A Glossary*, 2d ed., Atomic Energy Commission; F. Casey, *Compilation of Terms in Information Sciences Technology*, Federal Council for Science and Technology, 1970; *Glossary of Staff Terminology*, Office of Aerospace Research, U.S. Air Force, 1963; *Naval Dictionary of Electronic, Technical, and Imperative Terms*, Bureau of Naval Personnel, 1962; *ADP Glossary*, Department of the Navy, NAVSO P-3097.

MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS
Copyright © 1974 by McGraw-Hill, Inc. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publishers.
Philippines Copyright, 1974, by McGraw-Hill, Inc.

10 9 8 7 6 5 4 3 2

Library of Congress Cataloging in Publication Data

McGraw-Hill dictionary of scientific and technical terms.

I. Science—Dictionaries. 2. Technology—Dictionaries. I. Lapedes, Daniel N., ed. II. Title: Dictionary of scientific and technical terms.
Q123.M15 503 74-16193
REF ID: A65257-1

olyclimax olyhedrosis

1146

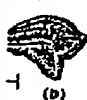
1147

FIBER



polyester
on resistance

IDAE



polygnathus
ice
rodella,
Polygnathus

ES



stipules
are
ograph
National

leaflike bodies have a central intestine with radiating branches, many eyes, and tentacles in most species.

polyclimax [ECOL] A climax community under the controlling influence of many environmental factors, including soils, topography, fire, and animal interactions.

polycondensation [ORG CHEM] A chemical condensation leading to the formation of a polymer by the linking together of molecules of a monomer and the releasing of water or a similar simple substance.

polyconic chart [MAP] A chart on the polyconic projection.

polyconic projection [MAP] A conic map projection in which the surface of a sphere or spheroid, such as the earth, is conceived as developed on a series of tangent cones, which are then spread out to form a plane; a separate cone is used for each small zone.

Polyopidae [INV ZOO] The single family of the suborder Cladocopa.

polyorase [MINERAL] (Y,Ca,Ce,U,Th)(Ti,Cb,Ta)₂O₆ Black mineral composed of titanate, columbate, and tantalate of yttrium-group metals; it is isomorphous with euxenite and occurs in granite pegmatites.

polycrystal [MATER] A polycrystalline solid.

polycrystalline [MATER] 1. Pertaining to a material composed of aggregates of individual crystals. 2. Characterized by variously oriented crystals.

Polytenidae [INV ZOO] A family of hemipteran insects in the superfamily Cimicoidae; the individuals are bat ectoparasites which resemble bedbugs but lack eyes and have ctenidia and strong claws.

polythello [ORG CHEM] A molecule that contains two or more closed atomic rings; can be aromatic (such as DDT), aliphatic (bionthyl), or mixed (dicarbazyl).

polythello hydrocarbon See polynuclear hydrocarbon.

polythello [MED] Multiple pregnancy.

polythello kidney [MED] A usually hereditary, congenital, and bilateral disease in which a large number of cysts are present on the kidney.

polythello [MED] A condition characterized by an increased number of erythrocytes in the circulation.

polythello vera [MED] An absolute increase in all blood cells derived from bone marrow, especially erythrocytes.

polythello [MED] The condition of having supernumerary fingers or toes.

polythello [MED] Excessive thirst.

polydispersity [CHEM] Molecular-weight nonhomogeneity in a polymer system; that is, there is some molecular-weight distribution throughout the body of the polymer.

Polydopidae [FALCON] A Cenozoic family of rodentlike marsupial mammals.

polydopite [MINERAL] Ni₂S₂ A mineral of the linnaeite group consisting of nickel sulfide.

polyelectrolyte [ORG CHEM] A natural or synthetic electrolyte with high molecular weight, such as proteins, polysaccharides, and alkyl addition products of polyvinyl pyridine; can be a weak or strong electrolyte; when dissociated in solution, it does not give uniform distribution of positive and negative ions (the ions of one sign are bound to the polymer chain while the ions of the other sign diffuse through the solution).

polyembryony [ZOO] A form of sexual reproduction in which two or more offspring are derived from a single egg.

polyene [ORG CHEM] Compound containing many double bonds, such as the carotenoids.

polyester fiber [TEXT] A fiber filament made from a material that is 85% or more polyester resin.

polyester film [MATER] Thin film made of polyester resin; used for packaging food and other products.

polyester laminate [MATER] Glass fabric or fiber mat impregnated with a polyester resin slurry, and cured; used to make sheets, bars, and structural shapes.

polyester-reinforced urethane [MATER] A porous material which may have a urethane impregnation or a silicone coating; used for shoe uppers and as a substitute for industrial leathers.

polyester resin [ORG CHEM] A thermosetting synthetic resin made by esterification of polybasic organic acids with polyhydric acids; examples are Dacron and Mylar; the resin has high

strength and excellent resistance to moisture and chemicals when cured.

polyester rubber See polyurethane rubber.

polyestrous [PHYSIO] Having several periods of estrus in a year.

polyether resin [ORG CHEM] A polymer, that contains $-(CH_2CHRO)-$, in the main-chain or side-chain linkage.

polyethylene See ethylene resin.

polyethylene dielectric [ELEC] Polyethylene used in applications where its very high resistivity, good dielectric strength, and other electrical properties are important, such as for electrical insulation or in dielectrics.

polyethylene glycol [ORG CHEM] Any of a family of colorless, water-soluble liquids with molecular weights from 200 to 6000; soluble also in aromatic hydrocarbons (not aliphatics) and many organic solvents; used to make emulsifying agents and detergents, and as plasticizers, humectants, and water-soluble textile lubricants.

polyethylene resin See ethylene resin.

polyethylene terephthalate [ORG CHEM] A thermosetting polyester resin made from ethylene glycol and terephthalic acid; melts at 265°C; used to make films or fibers.

polyforming [CHEM ENG] A noncatalytic, petroleum-refinery process charging C₃ and C₄ gases with naphtha or gas oil at high temperature to produce high-quality gasoline and fuel oil; mostly replaced by catalytic reforming; the product is known as polyformdistillate.

Polygalaceae [BOT] A family of dicotyledonous plants in the order Polygalales distinguished by having a bicarpellate pistil and monadelphous stamens.

polygalacturonase [BIOCHEM] An enzyme that catalyzes the hydrolysis of glycosidic linkage of polymerized galacturonic acids.

Polygalates [BOT] An order of dicotyledonous plants in the subclass Rosidae characterized by its simple leaves and usually irregular, hypogynous flowers.

polygamous [BOT] Having both perfect and imperfect flowers on the same plant. [VERT ZOO] Having more than one mate at one time.

polygen See polyvalent.

polygene [GEN] One of a group of nonallelic genes that collectively control a quantitative character.

polyglycol [ORG CHEM] A dihydroxy ether derived from the dehydration (removal of a water molecule) of two or more glycol molecules; an example is diethylene glycol, CH₂OH-CH₂OCH₂CH₂OH.

Polygnathidae [FALCON] A family of Middle Silurian to Cretaceous conodonts in the suborder Conodontiformes, having platforms with small pitlike attachment scars.

polygon [MATH] A figure in the plane given by points P_1, P_2, \dots, P_n and line segments $P_1P_2, P_2P_3, \dots, P_{n-1}P_n, P_nP_1$.

Polygonaceae [BOT] The single family of the order Polygonales.

Polygonales [BOT] An order of dicotyledonous plants in the subclass Caryophyllidae characterized by well-developed endosperm, a unilocular ovary, and often trimerous flowers.

polygonal ground [GEOL] A ground surface consisting of polygonal arrangements of rock, soil, and vegetation formed on a level or gently sloping surface by frost action. Also known as cellular soil.

polygonal method [MIN ENG] A method of estimating ore reserves in which it is assumed that each drill hole has an area of influence extending halfway to the neighboring drill holes.

polygonization [SOLID STATE] A phenomenon observed during the annealing of plastically bent crystals in which the edge dislocations created by cold working organize themselves vertically above each other so that polygonal domains are formed.

polygraph See lie detector.

polyhalite [MINERAL] K₂MgCa₂(SO₄)₄·2H₂O A sulfate mineral usually found in fibrous brick-red masses due to iron.

polyhedral angle [MATH] The shape formed by the lateral faces of a polyhedron which have a common vertex.

polyhedral disease See polyhedrosis.

polyhedron [MATH] A solid bounded by planar polygons.

polyhedrosis [INV ZOO] Any of several virus diseases of insect larvae characterized by the breakdown of tissues and

presence of polyhedral gra

disease.

polyhedrosis See hyperhid

polyhydramnios [MED] An

fluid. Also known as hydr

polyhydric alcohol [ORG C

droxy] (-OH) radicals, st

known as polyalcohol; pol

polyhydric phenol [ORG C

taining two or more hyc

C₆H₄(OH)₂

polyimide resin [ORG CHE

by reacting pyromellitic

amine; has high resistance

components of internal oc

polyisoprene [ORG CHEM

rubber, balata, gutta-perca

can also be made synthet

ch-1,4- and trans-1,4-poly

plastic.

polyisocyanate [ORG CHEM

heat reaction of lactic aci

used to produce tough, w

polymenorrhoea See metr

polymer [ORG CHEM] 1. S

formed by the union of

example polymerization

chain, or condensation (

production of water) for

Polymerase [INV ZOO] For

equivalent to the phylum

polymerase [BIOCHEM] A

together to form polynuc

polymer gasoline [MATE

normally gaseous hydro

hydrocarbons boiling in

polymerization [CHEM]

monomers to produce a

that produces such a bo

polymer paint [MATER] A

resin, or a combination

water as the base; it ex

evaporates to leave a c

film of plastic.

polymer plastic [MATER]

or without additives, suc

ants, or fillers; can be sp

or foamed, depending

thermosetting.

polymethyl methacrylate

mer derived from

C(CH₃)COOCH₃; tran

qualities and water resis

ing fixtures, optical in

polymorphic [HYD] Perta

having no stable therm

sedimentary rock, bein

more than one mineral

polymorphic See polym

polymorphic [MINERAL

black mineral compose

cerium-group metals,

polymorphic

polymorphic [BIOL] An

[CRYSTAL] A crystal fr

known as polymorphic

cycle.

polymorphic modification

polymorphism [BIOL]

individual in a single

structural forms in a s

the life cycle. [CRYST

stance crystallizing in

structures, such as di

pleomorphism. [GEN]

mined distinct forms i

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☒ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.